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Reply to Office Action of January 30, 2006

### **REMARKS/ARGUMENTS**

Prior to this Amendment, claims 1-6, 8-12, and 14-46 were pending in the application.

Claim 1 is amended to clarify dynamic allocation of "roles" and "assignments" to applications in a networked computer system as discussed at paragraphs [0036] to [0046]. Entry of this amendment is not believed to raise new issues but to simply better define previously presented claim language, and the Examiner is requested to enter and consider the claim amendment rather than requiring Applicants to file an additional RCE or to go to Appeal without the benefit of this defining language.

Claim 34 is amended to correct a typographical error.

After entry of the Amendment, claims 1-6, 8-12, and 14-46 remain for consideration by the Examiner.

### **Rejection of the Claims under 35 U.S.C. §102(e)**

Claims 1-6, 8-12 and 14-46 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,766,348 ("Combs"). Applicants respectfully traverse these rejections in light of the following remarks.

Initially, it may be useful to describe a few of the large differences between the teaching of Combs and the invention being claimed. Applicants in a prior amendment included the term "applications" to clarify that the invention was directed toward managing a plurality of high-availability-aware application rather than hardware, and as a result, the Examiner withdrew the Tanaka reference that was directed toward managing "nodes." However, Combs is now being cited against the pending claims, and Combs teaches the use of a number of agents ("resource allocator system agents" or "RASAs" that form a resource allocator handling system" or "RAHS") to provide load balancing of hardware resources. Combs teaches that "users" (elements 107-110 in Fig. 1) access resources (elements 112-118 of Fig. 1 which may be "printers, modems, switchboards, or

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other electronic devices", see col. 1, lines 53-65). The resources are registered with the RAHS and to use a resource a user transmits requests to a RASA, which acts to provide load balancing of the use of the resources through communications with other RASA in the RAHS (and by maintaining a table or database of information on the resources). However, there is no teaching in Combs that the "users" or applications running in the computer system are registered or that these users have roles and assignments dynamically allocated to achieve redundancy in the system. Hence, it appears that there are significant basis differences between the system of Combs and that taught and claimed by the Applicants.

Specifically, claim 1 calls for the registration of applications. In Combs, the applications providing processing functionality and the like are the users, and there is no discussion of registering these users. Instead, Combs teaches that the resources or hardware devices are registered with the RAHS (for example, see Fig. 12 of Combs). The Office Action cites col. 4, lines 16-39 in which the resource allocator tracks resource usage by users, but this fails to teach registering a plurality of high-availability-aware applications as called for in claim 1. The cited portion of Combs discusses information exchange among the RASAs and to users that request resources but does not even discuss registering the resources let alone the users for management. Further, there is no discussion of "invoking a registration application programming interface" by the applications to achieve registration. Hence, the first "invoking" element of claim 1 is not shown or suggested by Combs.

Further, the second "invoking" element of claim 1 calls for invoking callback interfaces of the registered applications to "dynamically allocate roles and assignments" to the applications wherein "for each of the registered applications the assignments define a specialization of a functionality provided and the roles define an availability state." There is no suggestion in Combs that the users or other applications are dynamically allocated roles and assignments and particularly, as

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these terms are defined in claim 1. The users provide a static functionality in the Combs system and their roles and assignments are not changed by the RAHS. The Office Action cites Combs at col. 4, lines 1-39 for teaching this limitation, but at this citation and elsewhere, Combs discusses managing the hardware resources and making them available to the users/applications. There is no discussion that such resources may be allocated an "assignment" that specializes their functionality. There is no discussion that applications within the Combs system are allocated "roles" that define their availability state. The RASA are agents or applications but they are not managed through registration and dynamic allocation of assignments and roles as called for in claim 1. Hence, the second "invoking" element of claim 1 is not shown or suggested by Combs, and Applicants request that the rejection be withdrawn.

Further, as discussed in the last Amendment, independent claim 1 recites, among other things, "invoking callback interfaces of registered applications to dynamically allocate roles and assignments to one or more of registered applications of the plurality of high-availability-aware applications to achieve a desired redundancy level based on application type information." Combs fails to disclose the establishment of a redundancy level based on application type information nor does Combs disclose allocation of roles and assignments to achieve a redundancy level.

The Office Action in the Response to Arguments by indicating that redundancy is obtained in the RAHS of Combs because there is mirroring and redundancy of the RASAs. However, claim 1 calls for the dynamic allocation of roles and assignments to be performed to "achieve a desired redundancy level" and Combs does not allocate roles and assignments to the RASA to obtain redundancy. Instead, availability or a role is managed/tracked for resources by the RASAs, and there is no discussion of "assignments" as defined in claim 1. For this additional reason, Combs fails to support an anticipation rejection of claim 1.

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Claims 2-6, 8-12, and 14-17 depend from claim 1 and are believed allowable over Combs at least for the reasons provided for allowing claim 1.

Independent claim 18 is directed to a method similar to claim 1, and hence, the reasons for allowing claim 1 over Combs are believed applicable to claim 18. Specifically, claim 18 calls for "allocating roles" to registered applications and allocating an assignment to the application and also changing a role of the application. As discussed with reference to claim 1, Combs fails to teach allocating roles and assignments to the users or other applications in its description or figures. Further, claim 18 calls for "determining an application specific redundancy level based on the application type information."

The Office Action appears to be indicating that the provision of multiple RASAs provides such a determining/redundancy, but Applicants assert that claim 18 calls for the redundancy to be application specific and this is not shown or suggested by Combs, which as discussed with reference to claim 1 is not concerned with redundancy in the users/applications. Additionally, the final two elements describe specific role and assignment processes that are not shown in Combs. In other words, where does Combs teach allocating a particular assignment to a number of secondary applications to achieve a redundancy level? The Response to Arguments implies that since the RAHS can survive failure of a resource or a RASA that it provides this type of redundancy, but Combs does not teach that redundancy for a user is determined and then based on such determination that additional users are allocated a particular assignment to achieve redundancy. Hence, each and every element of claim 18 is not shown by Combs.

Claims 19-24 depend from claim 18 and are believed allowable at least for the reasons for allowing claim 18.

Independent claim 25 is directed to a method with limitations similar to those of claim 18, and hence, the reasons provided for allowing claim 18 are believed applicable to claim 25. Further, claim 25 calls for "maintaining application

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relationship information", "selecting a first application from the registered applications based on application type information and application relationship information", and "determining a redundancy level based on the application type information." Combs fails to show these limitations of claim 25. The Office Action cites Combs at col. 9, lines 17 to col. 10, lines 40 and col. 4, lines 1-40 for teaching these limitations (and all others of claim 25), but at these citations, Combs fails to show the determination of a redundancy level based on application type information, with Applicants' explaining exemplary application types beginning at paragraph [0047] of their specification. Providing redundancy in the RASAs is not the same as determining redundancy levels for particular application types. Combs at this citation also does not show maintaining application relationship information or selecting an application based on such information (i.e., where does Combs teach maintaining relationship information for the users/applications?). For these additional reasons, claim 25 and claims 26-29, which depend from claim 25, are believed allowable over this reference.

Independent claims 30 and 33 are directed to a computer program product with limitations similar to claim 1 and are believed allowable for the reasons provided for allowing claim 1. Claims 31-32 depend from claim 30 and are believed allowable as depending from an allowable base claim.

Independent claim 34 is directed to a computer program product with limitations similar to claim 18 and is believed allowable over Combs for the reasons provided for allowing claim 18. Claim 35 depends from claim 34 and is believed allowable at least for the reasons for allowing claim 34.

Independent claim 36 is a system claim with limitations similar to claims 1, 30, and 33 and is believed allowable for the reasons provided for allowing these claims. Claims 37-39 depend from claim 36 and are believed allowable for at least the reasons provided for allowing claim 36.

Independent claim 40 is a system claim with limitations similar to claims 18

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and 34 and is believed allowable for the reasons provided for those claims.

Independent claim 41 is directed to an apparatus with limitations similar to claim 1, and hence, the reasons provided for allowing claim 1 are believed equally applicable to claim 41. Claims 42-46 depend from claim 41 and are believed allowable over Combs for at least the reasons provided for claim 41.


### **Conclusions**

In view of all of the above, it is requested that a timely Notice of Allowance be issued in this case.

No fee is believed due for this submittal. However, any fee deficiency associated with this submittal may be charged to Deposit Account No. 50-1123.

Respectfully submitted,

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